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C02F 1/44**(21) Application number: **10126015**(22) Date of filing: **08.05.98**(71) Applicant: **TORAY IND INC**(72) Inventor:  
**TANIGUCHI MASAHIDE  
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MINEGISHI SHINICHI****(54) HOLLOW FIBER MEMBRANE MODULE AND USE APPLICATIONS THEREOF**

(57) Abstract:

**PROBLEM TO BE SOLVED:** To provide a hollow fiber membrane module which can maintain the quality of permeated water at a high level even when the membranes are damaged by making the internal flow path cross section area of at least one part of hollow fiber membrane- fixed parts consisting of plural hollow fiber membranes with end parts fixed adhesively smaller than the internal flow path cross section area of the hollow fiber membranes in the non-adhesively fixed part.

**SOLUTION:** In the hollow fiber membrane module comprising a plurality of hollow fiber membranes 1 with at least one of the end parts fixed adhesively while an open state is maintained by an adhesively fixed part 2. The part 8 is provided where the internal flow path cross section area of a hollow fiber membrane 2 of at least one part of hollow fiber membrane 1-adhesively fixed parts is substantially smaller than the internal flow path cross section area of the hollow fiber membrane 1 in the non- adhesively fixed part. Thus it is possible to inhibit the deterioration of the quality of permeated water, even when an untreated water flows into the interior of the hollow fiber membrane 1 due to damage inflicted to the membrane 1. Besides, even when

a comparatively large amount of pollutant is contained in the untreated water, the pollutant is accumulated in the contracted dia. part 8 to generate a cake filtration state.

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